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ABSTRACT

This study assessed the consistency of student health care services at Arizona State University (ASU) at Tempe to see if they were congruent with societal trends for institutions. A comparison of the health care center as it was in 1960 and in 1985 was made, and a literature review investigated how ASU parallels the general trend for health care in other schools of higher education. A questionnaire was submitted to random groups of students, alumni, faculty, health service personnel, and state legislators regarding the legitimacy, desirability, and cost-effectiveness of ASU's health care services. Recommendations for change were also sought. Findings indicated that ASU had greatly increased its health care services over the years and this was in line with the trend for such institutions. Most respondents felt relatively supportive of the health care service delivery system, though state legislators had some reservations about service delivery in the area of sexuality and about the cost-effectiveness of services. It was recommended that this research should be expanded by studying other areas of the health care service delivery system such as medical technologies. The questionnaire is appended. (Author/JD)

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AN EXAMINATION OF THE PROVISION OF STUDENT HEALTH SERVICES BY PUBLICLY FUNDED UNIVERSITIES, TO ASSESS THE CONSISTENCY OF THESE ACTIVITIES WITH THE SOCIETAL ROLE OF THE PUBLICLY FUNDED UNIVERSITY IN THE 1980S.

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EMERGENCE OF HIGHER EDUCATION IN AMERCA

By
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Arizona State University

CLUSTER COORDINATOR, Dr. Raul Cardenas
CLUSTER, Phoenix

A PRACTICUM PRESENTED TO NOVA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF EDUCATION

SP 030 538

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NOVA UNIVERSITY

August, 1987

PRACTICUM PROPOSAL CHECK SHEET

1. Name of Student: Charles R. Campbell

   Cluster: Phoenix Date: January 1987

2. Job Title: Coordinator Environmental Health, ASU

3. Title of the Practicum: An examination of the provision of student health services by publicly funded universities to access the consistency of these activities with the societal role of the publicly funded university

4. What change in the institution or organization is proposed? A more effective process for assessement of the appropriateness of potential programs and activities

5. Where will the practicum be carried out?

   Institution: Arizona State University

   Department: Student Health Center, Office of Student Affairs

6. Does the design contain criteria for measuring the results of the practicum? Yes

7. What are the required inputs:

   a. Estimated number of hours to complete the practicum and by whom? 150 hours by student

   b. Are needed facilities and other means available? Yes
      If the performance of the practicum required prior approval from a superior, has such approval been secured? Yes

   c. When (date) will the practicum be started and when is it expected to end? April 1986 - January 1987

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ABSTRACT

The purpose of this study was to access the consistency of student health care services at Arizona State University at Tempe to see if they were congruent with societal trends for institutions. The investigation proceeded through three methodologies:

1. a temporal comparison of the health care center as it was in 1960 and in 1985.

2. a literature review aimed at showing the societal trend for health care services delivery and how Arizona State University at Tempe's health care services parallels this trend.

3. analysis of questionnaire data regarding the legitimacy, desirability, and cost-effectiveness of Arizona State University at Tempe's health care services as well as respondents' recommendations for change; respondents being random groups of students, alumni, faculty, health service personnel, and state legislators.

Findings derived from all methodologies showed that Arizona State University at Tempe had greatly increased its health care services over the years and that this was indeed in line with the societal trend for institutions. It was also shown that while most respondents felt relatively supportive of Arizona State University at Tempe's health care service delivery system, state

legislators had some particular reservations about service delivery in the area of sexuality and about the cost effectiveness of services.

It was recommended that future investigators expand upon this research by studying other areas of the health care service delivery system such as medical technologies.

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Chapter I

INTRODUCTION

The university, as it is known and understood in the last quarter of the twentieth century, is the current manifestation of a process which began to evolve in the Middle Ages (Haskins, 1957). The universities of the Middle Ages did not have libraries, nor did they have laboratories. An institution without such facilities in the mid-1980s would not, in most instances, qualify for classification as a university (Gittel, 1985). These differences are but two of many illustrations of how the evolutionary process has changed and continues to change the shape and the character of the university.

The addition of libraries, laboratories, and similar facilities to universities resulted from the application of an easily understood concept, which holds that the teaching process should be supplemented by tools which enhance its effectiveness and efficiency. Libraries and laboratories are, at least in the last quarter of the twentieth century, readily accepted by most individuals as being consistent with this concept.

But as well as being the latest manifestation of an historical evolutionary process, the university is also the product of the contemporary society of which it is a part

(Mayhew, 1980). It was in such a societal context that American universities greatly extended, elaborated, and increased services they provided to students and, indeed, added new ones. Three examples may be cited: the introduction of remedial instruction for ill-qualified and low-achieving students into their curricula (Roueche, Baker & Roueche, 1985), the extensive elaboration of vocational and job placement services, and the similar extensive elaboration of health services (Mitchell, 1981).

Health services have experienced a vast growth and elaboration. The definition of "health" itself, for example, has been expanded to include mental health as well as physical health, and many public universities, if not all, now provide psychological counseling services. The concept of "health" has also been expanded into the sexual area, and many public universities, for example, provide birth control pills at under market price, or at no cost, to female students.

Much debate has surrounded the introduction, expansion, and elaboration of such services within public universities. Supporters regard them as (a) the social, if not moral, obligation of the contemporary public university, (b) an enhancement to the learning process, and (c) a means of addressing problems associated with declining enrollments. Detractors, however, regard them as (a) unwarranted intrusions by public universities into areas outside their legitimate areas of concern and

involvement, (b) usurpations of individual (student) responsibilities, and (c) mismanagement, if not abuse, of public resources.

Once a commitment to the provision of student services has been made, it is difficult for an administration to back away from them. Indeed, it is difficult to control the escalation of such services (Shaw, 1981). The cost of providing such services can soon cause them to appear (in the perceptions of some critics) to assume the role of "the tail wagging the dog." In this context, the major problem confronting university administrators is that of devising a level of commitment to student services which is appropriate for the enhancement of the learning process, without, at the same time, assuming a dominant role in university affairs.

This research focused on the provision of health services by U.S. universities. The specific purpose of the research was to demonstrate that the development of student health services programs by publicly funded universities in the United States is consistent with the societal role of such institutions in the 1980s. The methodology utilized in the study was that of the "case history" approach in which the primary focus was based upon an exploration of health services provided by Arizona State University at Tempe.

Chapter 2

BACKGROUND AND SIGNIFICANCE

This investigation of the development of student health service programs provided by the Arizona State University at Tempe as consistent with the societal role of this institution is expressly related to the basic concepts discussed in the seminar, "Emergence of Higher Education in America." The evolution of health services programs at publicly funded universities in the United States in general, and at Arizona State University at Tempe in particular, is a major development in the functional characteristics of American universities.

Roemer (1981) reported that

> Since a large proportion of students attending colleges or universities are away from their family homes, the importance of some provision for general medical care--not merely the health appraisal and first aid services conventional in elementary and secondary schools--has long been appreciated. (p. 128)

The historical pattern of health services growth at the university level can be delineated in terms of the following major events:

1. From 1860 to 1900, institutions of higher education which were providing health services slowly shifted from an emphasis upon physical fitness and

treatment of athletic injuries to standard medical check-ups (Dalrymple & Purcell, 1976).

2. In 1906, the University of California at Berkeley became the first college to offer a general, comprehensive medical care service.

3. From 1917 to 1924, due largely to the efforts of the American College Health Association, over 131 colleges had organized health programs (Mock, 1924), a figure which increased to over 153 by 1930 (Falk, Rorem, & Ring, 1933).

4. By 1953, 83 percent of most universities in the United States had some type of organized health services with those most likely not to have such programs being two-year colleges, schools with specialized training programs, and colleges with less than 500 students enrolled (Moore & Summerskill, 1954).

5. From 1953 to 1975 and into the 1980s, college health services have been strengthened and expanded (Boland, 1985).

Thus, what this historical trend shows is that the overall thrust of health services provided by colleges and universities is one of expansion and elaboration of services. However, the nature of this expansion in terms of the specific factors underlying it have not been well researched. According to Roueche, Baker, and Roueche

(1985) and Mayhew (1980), one of the most influential factors shaping university health care services is now and has always been the society within which the university functions.

In American society, health services as provided by public institutions in general and colleges and universities in particular have seen elaboration and expansion of services. Roemer (1981) reported that this was due to several societal factors. These were: (1) the impact of epidemics on public health; (2) expansion of medical knowledge; (3) high rates of rejection of military draftees due to neglect of physical health problems; and (4) lobbying effectiveness of such organizations as the National Education Association and the American Public Health association.

The foregoing factors contributed to a general societal movement toward improving student health. However, it was truly not until the last thirty years that the college or university as an institution, came to be seen as having a specific and articulated societal role with respect to the provision of health care services. This role, as viewed in the 1980s, held the university as morally and ethically responsible for the maintenance of student health, physical and mental, and as an extension of the learning processes in that such services assisted in educating users as to personal and public health problems.

This research examined whether university practices at Arizona State University at Tempe in terms of health care services were congruent with this role. It was held that examining for this congruency would provide a major process tool for administration of publicly funded universities. Also provided in the research effort was an illustration of methods and procedures which could be used by other universities interested in assessing the appropriateness, relative to societal roles, of their health service programs.

Chapter 3

PROCEDURES

In the effort to demonstrate congruency between Arizona State University at Tempe's developed health services and the societal role of publicly funded universities' health service delivery in the 1980s, this study was conducted in terms of three distinct modes of research. These may be delineated as follows:

1. An exploration of the elaborations and expansions that have taken place at Arizona State University at Tempe with the exploration based on a comparative analysis of services offered by the university in 1985. In terms of specific comparisons made, 1960 and 1985 were compared with respect to (a) types of services; (b) number of students treated; (c) percentages of total treatment provided by the health services center; (d) budget allotment for health services expressed in terms of funds allocated and available for health services per capita of student full-time enrollment; (3) the cost of services provided, expressed in terms of per capita expenditure for health services for full-time enrolled students; (f) the staff expressed as full-time and part-time university personnel employed to provide health care services to students; and (g) the method of financing such as student fees, grants

from legislature, and university endowment measured for each category of financing as a percentage of the total expenditures for health services.

2. The compilation of a literature review demonstrating an increase and elaboration of health services provided by the U.S. military and U.S. corporations which parallels the increase and elaboration of student health services provided by Arizona State University at Tempe.

3. Dissemination of a questionnaire (see Appendix) on Arizona State University at Tempe's student health services to groups of health service personnel, students, faculty, and alumni, as well as to state legislators to determine the extent to which these groups believed that the services provided by the university were congruent with the societal role of such institutions in the 1980s.

Subject selection procedures were relatively simple. From school records, a numbered list was prepared for each of the following groups: university health service personnel, students, faculty, and members of the alumni graduating in the year 1960. Using a random numbers table, 10 numbers were selected and the names on each of these lists corresponding with the numbers were selected to serve as subjects. In addition to the foregoing, the names of all state legislators were also put on a numbered list and selected via the same random selection procedure.

Once subjects were selected, questionnaires were mailed to them. In total, the questionnaire was mailed to a random sample of: (1) 10 health service personnel; (2) 10 students; (3) 10 faculty members; (4) 10 alumni members; and (5) 10 of the state's legislators. To insure a high return rate, the investigator waited 9 days. After this period, the investigator contacted by telephone all those who had not returned their completed questionnaires. The importance of the study was stressed during these conversations and if some subjects said that they no longer had their questionnaires, new ones were mailed to them. These procedures resulted in all 50 subjects completing and returning their questionnaires.

All statistical analyses performed were based on the level of data measurement in the questionnaire which used Likert-type scaling and was, therefore, equal-interval in nature. The specific statistic selected was the analysis of variance which is, according to Linton and Gallo (1975), not only amenable to equal-interval data, but also sensitive (able to detect even small differences between groups) and robust (alpha level remains stable despite even extreme violations of the statistic's underlying assumptions).

In terms of the specific methodologies, comparisons of Arizona State University at Tempe's health services across years required primarily document analyses on data

in university files. The literature review required primarily a library search for relevant materials and an explication of these materials in relation to the research problem. Questionnaire data was handled in terms of a quantitative analysis using a serires of analyses of variance.

Research Questions

So that the undertaken study may be fully understood, it may be broken down in terms of being an attempt to answer the following research questions:

1. In a comparison of health services offered by Arizona State University at Tempe in 1960 and health services offered in 1985, are there any differences with respect to types of services offered; number of students treated; percentages of total treatment provided by the health services center; budget allotment for health services; costs of services; staff; and methods of financing services?

2. Does any observed increase in the student health services of Arizona State University at Tempe parallel increases in health services that have been made in the U.S. military and in American corporations; that is, are there similarities in the nature and types of increase between Arizona State University, the military, and corporations?

3. How do students, state legislators, health service personnel, alumni graduating in 1960 and faculty compare in terms of: (a) the degree to which they perceive health care services legitimate; (b) the degree to which they perceive health care services desirable; (c) the degree to which they perceive health care servcies cost effective; and (d) the degree to which they perceive health care services to be consistent with societal trends?

Hypotheses

Based on a review of the existing literature on health services offered by American institutions, the following hypotheses were formulated:

Hypothesis 1. Health services offered by Arizona State University at Tempe in 1960 will significantly differ from health services offered by the university in 1985 in terms of: types of services offered; number of students treated; percentages of total treatement provided; budget allotment for health services; costs of services; staff; and methods of financing services.

Hypothesis 2. The next set of hypotheses address comparisons between Arizona State University at Tempe students, faculty, health services personnel as well as Arizona State legislators. Because the existing literature contains no comparisons of this nature in terms of health services provided by the university, it offers no firm

foundation for the formulation of directional hypotheses. For this reason, all of these additional hypotheses were stated as null theses. These additional hypotheses may be delineated as follows:

Null Hypothesis 1. State legislators, ASU students, ASU alumni, ASU health services personnel, and ASU faculty will not significantly differ in terms of the degree to which they perceive health services offered at the health care center to be legitimate.

Null Hypothesis 2. State legislators, ASU students, ASU alumni, ASU health services personnel, and ASU faculty will not significantly differ in terms of the degree to which they perceive health center services to be desirable.

Null Hypothesis 3. State legislators, ASU students, ASU alumni, ASU health services personnel, and ASU faculty will not significantly differ in terms of the degree to which they perceive health center services to be cost effective.

Null Hypothesis 4. State legislators, ASU students, ASU alumni, ASU health services personnel, and ASU faculty will not significantly differ in terms of the degree to which they perceive health center services to be consistent with societal trends.

Limitations of the Study

The boundaries beyond which conclusions and interpretations of this study's findings may not be valid are given by the limitations involved in the study's conceptual and methodological structure. These limitations or restrictions may be delineated as follows:

1. The populations of interest were restricted to ASU students, ASU alumni graduating in the year 1960, ASU health services personnel, ASU faculty, and the state legislators. Whether other colleges and universities and their state legislators would show a similar pattern of findings cannot be determined on the basis of this study and thus conclusions can not be drawn concerning them.

2. Data was, in part, perceptual in that the relevant populations were asked to rate what they believed regarding health care services. Whether perceptions reflect the actualities concerning health care services at Arizona State University at Tempe cannot be determined on the basis of these perceptual data.

3. Some data in the study was obtained from school files and library research--sources which were not exhaustive. This means that logical conclusions drawn on the basis of these sources must be considered valid only to the extent that sources provided complete information.

4. Part of the collected data was handled qualitatively rather than quantitatively. Qualitative analysis must be considered to be necessarily less precise than quantitative analysis. Had all analyses been quantitative, findings may have been different in terms of precision.

Definitions

The undertaken study was highly conceptual. For ease of reading and understanding the study, key concepts are here operationally defined:

Elaborations and increases in ASU health services. This phrase refers to measurable changes taking place in Arizona State University at Tempe's health services from 1960 to 1985 in the areas of: types of services offered, number of students treated; percentages of total treatment provided; budget allotments for health services; costs of services; staff; and methods of financing services.

Health Services. All services offered by Arizona State University at Tempe toward the goals of maintaining or improving the physical and/or psychological health of service users.

Chapter 4

RESULTS

Arizona State University at Tempe's Health Service Elaborations and Expansions: 1960 to 1985

In 1960, the health services provided by Arizona State University at Tempe were quite different from what they were in 1985. Specifically, they were far more restricted in scope and consisted primarily of basic medical treatment. In terms of the study's indices of health care services provided, the following comparisons were made:

1. In 1960, the types of student health care provided were: referral of students to home or hospital for bed care as well as placement of students in the infirmary for bed care, dispensary treatment which included simple counseling on how students might maintain better health, laboratory testing, neuropsychiatric consultations serving primarily as a preliminary diagnosis followed by referral to appropriate treatment sources.

The foregoing may be compared with the health center in 1985 which, of course, still provided the basic medical serices it did in 1960, but now also provided more extensive personal health services including medical, minor

surgical, selected sub-specialty and psychiatric services. In addition, there were laboratory testing and x-ray services. Also, the center provided extensive pharmacological and gynecological services. Further, the center served as an educational source by offering comprehensive instructional programs to students in how to promote healthy lifestyles for physical, intellectual, emotional, and spiritual health. The health center also served an environmental surveillance and control function in the area of communicable disease.

2. In 1960, the number of students treated by the health care center was 4,658 out of 16,921 full-time students, a percentage value of 27.53. In 1985, the center served 30,761 students which accounted for about 51 percent of the full-time student enrollment.

3. In 1960, specific treatments reported in terms of percentages of total treatment may be given as follows:

- Bed Care = 3.3 percent
- Diagnosis = 100.0 percent
- Dispensary = 56.0 percent
- Lab Tests = 16.0 percent
- Mental Health = .3 percent

In 1985, specific treatments reported in terms of percentages of total treatment provided may be given as follows:

- General Medical = 92.15 percent
- Mental Health = 2.9 percent
- Lab Tests = 68.49 percent
- Radiology Tests = 6.23 percent
- Health Promotion = 12.0 percent
- Dissemination of Health Literature = 90.76 percent
- Health Inspection for Communicable Disease = .34 percent
- Dispensary = 46.0 percent

4. With respect to the monies budgeted and expended in 1960, the following figures were available:

Budgeted	Costs
$ 64,968	$ 77,205

In terms of the 1985 school year, the following figures were available in dollar amounts:

	Budgeted	Costs
Student health	$186,300	$260,100
Student health (local)	106,750	101,741
Student health (EGS)	35,550	28,019
Pharmacy	44,000	110,458
Auxilliary Services	204,700	304,591

5. The 1985 staff of the student health center was many times over 100 percent of what it was in 1960 when there were only 15 full and part-time staff members.

6. In 1960, financing for student health services

was primarily student fees with some public and university endowmwnt funds. Similar financing applied in 1985; however, in all areas the amount of monies supplied was far greater than what it had been previously.

What the foregoing data show is that there has been an extensive increase in the number of students treated, the budget allocated, and the number of staff utilized by the health center over the years. Also, there has been a large increase in certain types of services provided such as counseling and gynecological services. Further, while the financing sources remained relatively stable over the years, the amount of monies coming from all sources has been greatly increased.

Relation of Student Health Services to Other Institutionalized/ Corporate Health Services

Is the trend observed in the Arizona State University at Tempe's health services conguent with trends in health service delivery in other major institutional and/or corporate sectors? A review of the literature indicates that this is the case. For example, Torrens (1984) has noted a tremendous increase in the services provided by the Military Medical Care System. Indeed, as it currently stands, the system has so increased its services that Torrens (1984) desribed its treatment philosophy as all-inclusive and noted that the military medical system

was responsible for protecting the health of all active duty personnel wherever they were serving and in providing them with health care that might eventually be needed for service-related problems. "The military medical system goes wherever active duty military personnel go, and assumes a responsibility for total care that is unique among American health care systems" (p. 231).

Torrens also pointed out that over the years the military has shifted from correcting existing conditions of ill-health to focusing on health maintenance. This shift is also present in university health care systems in general as well as the Arizona State University at Tempe's health care system in particular.

The foregoing brings up an important point which is that the health care services provided by Arizona State University at Tempe are quite similar to the health care services provided by major universities in general. This can be seen by comparing the trend observed at Arizona State University at Tempe from 1960 to 1985 to a review of the current literature on health services provided by universities and colleges discussed by Roemer (1981). Specifically, Roemer stated that research comparing services provided in 1953 to services provided in the 70s and 80s showed strong evidence of a strengthening of organized ambulatory services to college student populations.

Such findings are supported by a national survey conducted by the ACHA (American College Health Association, 1979). This study surveyed 255 United States colleges and universities and found that the extensive elaborations and expansions of health services tended to take place at the larger and older universities such as Arizona State University. The association also observed that, like Arizona State, costs were, in general, tremendous and straining of college budgets. They warned that rising costs were going to (and in some schools already have) lead to a curtailing of, if not outright elimination of, certain services. The conclusion of the study was that of the major universities, health services were so expanded that college health programs constituted a significant source of organized ambulatory care for young adults in America.

The elaborations and expansions of services at Arizona State University at Tempe is not only paralleled by other major universities and in the military medical care system, it is also paralleled in the corporate sector. In this regard, Roemer (1981) reported that industry health care services grew to such an extent that over 12 percent of all firms in the nation with 500 or more employees employed about 3,200 industrial physicians (about 1 percent of the nation's doctors) on a full-time basis. Moreover, they employed about 10,600 more doctors on a part-time basis.

Services provided in the industrial sector are numerous and include: preemployment examinations, services aimed at drug use, hearing defects, back problems, emotional difficulties and alcoholism. Also, there are periodic reexaminations involving electrocardiograms, proctoscopes as well as educational services on health and job safety factors. A Roemer (1981) noted, while the services provided were far from universal, organized ambulatory care programs have shown a strong increase in the industrial sector.

The Civil Service has also evidenced some elaboration and expansion of health care services since 1959. Roemer (1981) reported:

> Nearly all civilian federal employees obtain medical care in the general community . . . [however] . . . since 1959, federal agencies have offered to share the costs of private health insurance for their employees and dependents . . . . (p. 206)

What the literature clearly shows is that there has been an increase and elaboration of health services provided by the U.S. Military, U.S. Civil Service, and U.S. corporations which does indeed parallel the increase and elaboration of services provided at Arizona State University at Tempe. Moreover, the fact that there has been an elaboration and expansion of services at other major universities (as well as in the civil service, military, and business sectors) shows that student health services at Arizona State University at Tempe are consistent with societal trends.

Questionnaire Data

By analyzing responses of relevant university personnel on behalf of the provision of student health services regarding whether such expanded and elaborated services were a legitimate and desirable function of a publicly funded university, a questionnaire was derived. This questionnaire assessed the following:

1. The degree to which respondents felt each of the services provided by the health center were legitimate services.

2. The degree to which respondents felt each of the services provided by the health center were desirable services.

3. The degree to which respondents felt that health care services were cost effective.

4. The degree to which respondents felt that health care services were consistent with societal trends.

Questions were answered using a six-point Likert-type rating scale. The questionnaire also contained an open-ended question asking respondents what changes they would recommend in university health care services. As noted in the "procedures" section of this research, questionnaires were given to University Health Service personnel, students, faculty, alumni, and state legislators.

With respect to the questionnaire data, it can be noted that the first series of data analyses (all analyses of variance) examined for whether feelings toward the legitimacy of the health center services differed significantly for each of the services as a function of the category of type of respondent.

With respect to the foregoing, it was observed that findings from the series of analyses showed only one significant difference which was that respondents differed in terms of the degree to which they felt sex counseling to be a legitimate service of the student health center ($F = 3.13$, $df = 4;45$, p less than .05). The analysis of variance summary table is presented in Table 1 on the following page.

Specific comparison tests revealed the nature of significant findings which was that state legislators (Mean legitimacy rating = 4.23) felt sex counseling to be significantly less legitimate a health service than did either health service personnel (Mean legitimacy rating = 5.09) or students (Mean legitimacy rating = 5.13). No significant differences were observed for alumni or faculty.

The second series of performed analyses of variance examined as to whether desire for services significantly differed as a function of the type of respondent. Findings are presented in Table 2 and as inspection of the table shows, once again, the significant difference was

Table 1

RESULTS OBSERVED FOR THE ANALYSIS OF VARIANCE CONDUCTED ON "LEGITIMACY" RATINGS AT FIVE LEVELS OF TYPE OF RESPONDENTS

Source	df	SS	MS	F	p
Type of Respondent	4	69.90	17.48	3.13	<.05
Error	45	251.72	5.59		
Total	49	321.62			

Table 2

RESULTS OBSERVED FOR THE ANALYSIS OF VARIANCE CONDUCTED ON DESIRABILITY RATINGS AT FIVE LEVELS OF TYPE OF RESPONDENTS

Source	df	SS	MS	F	p
Type of Respondent	4	87.20	21.80	3.37	<.05
Error	45	289.65	6.47		
Total	49	370.85			

for the service of sex counseling ($F = 3.37$, $df = 4;45$, p less than .05).

In order to determine the precise nature of the observed findings, a series of specific comparison tests were performed. These tests revealed that students (Mean desirability rating = 4.99), faculty (Mean desirability rating = 5.10) and health center personnel (Mean desirability rating = 5.13) felt sex counseling a significantly more desirable service than did state legislators (Mean desirability rating = 3.91).

In order to examine whether respondents felt services to be cost effective, scores for each respondent were collapsed across all services and a mean was taken. These means were then compared for categories of respondent using an analysis of variance. The results of this analysis are presented in Table 3 on the following page, and as shown in this table, findings were significant ($F = 5.21$, $df = 4;45$, p less than .01).

Specific comparison tests revealed the nature of the observed finding. State legislators (Mean cost effectiveness rating = 2.85) found services significantly less cost effective than did student health personnel (Mean cost effectiveness rating = 4.96). No significant difference was observed for the other respondent groups.

Also examined was whether respondents felt that university health services were consistent with societal

Table 3

RESULTS OBSERVED FOR THE ANALYSIS OF VARIANCE CONDUCTED ON COST EFFECTIVENESS RATINGS AT FIVE LEVELS OF TYPE OF RESPONDENTS

Source	df	SS	MS	F	p
Type of Respondent	4	157.25	39.31	5.21	<.01
Error	45	339.88	7.55		
Total	49	497.13			

trends. One significant difference was observed in this regard. As shown in Table 4 on the following page, consistency ratings did show a significant difference ($F = 4.05$, $df = 4;45$, p less than .05). However, the nature of the observed difference was given by the results of specific comparison tests comparing group means. In this regard, it was observed that state legislators (Mean consistency rating = 3.86) felt services less consistent with societal trends than did alumni (Mean consistency rating = 4.62), faculty (Mean consistency rating = 4.74), students (Mean consistency rating = 5.21) or student health personnel (Mean consistency rating = 5.01). In addition, specific comparison tests revealed that alumni found services less consistent with societal trends than did students.

Also of interest with respect to questionnaire data were responses to the open-ended questions asking for recommendations for change. In this regard, the two most frequently cited changes were: (1) increase student fees to cover costs; and (2) decrease services in certain areas. Of interest here was whether these opinions differed as a function of the type of respondent. To determine this, two analyses were performed. The first of these analyses was a Chi Square analysis conducted to compare respondents favoring an increase in fees with respondents not favoring an increase. The contingency table observed for this analysis is presented in Table 5.

Table 4

RESULTS OBSERVED FOR THE ANALYSIS OF VARIANCE CONDUCTED ON CONSISTENCY RATINGS AT FIVE LEVELS OF TYPE OF RESPONDENTS

Source	df	SS	MS	F	p
Type of Respondent	4	108.55	27.14	4.05	<.05
Error	45	301.62	6.70		
Total	49	410.17			

As can be seen from inspection of Table 5, findings were significant (Chi Square = 16.80, df = 4, p less than .01). Specific comparison tests for frequency data revealed the precise nature of findings. These were:

1. Legislators were significantly more in favor of increasing student fees than were alumni.

2. Legislators were significantly more in favor of increasing student fees than were students.

3. Legislators were significantly more in favor of increasing student fees than were faculty.

4. Legislators were significantly more in favor of increasing student fees than were health service center personnel.

The final series of analyses performed examined whether categories of respondents significantly differed in their feelings about decreasing health services provided by the university health center. The contingency table observed for this analysis is presented in Table 6. As can be seen from inspection of this table, findings were significant (Chi Square = 15.84, df = 4, p less than .01). Specific comparison tests for frequency data revealed the nature of this obtained difference. Findings were that:

1. Legislators were significantly more in favor of decreasing services than were students.

2. Legislators were significantly more in favor of

Table 5

CONTINGENCY TABLE OBSERVED FOR
INCREASING STUDENT FEES DATA

Increase Fees	Alumni	Students	Faculty	Center Personnel	Legis-lators	Totals
Yes	5	1	5	4	10	25
No	5	9	5	6	0	25
Totals	10	10	10	10	10	50

Table 6

CONTINGENCY TABLE OBSERVED
FOR DECREASING STUDENT
SERVICES DATA

Decrease Services	Alumni	Students	Faculty	Center Personnel	Legis-lators	Totals
Yes	4	2	4	1	9	20
No	6	8	6	9	1	30
Totals	10	10	10	10	10	50

decreasing services than were the health services personnel.

The questionnaire data reveals a variety of information. First, for most categories of respondents, there appears to be moderate-to-strong opinions that the university health services are legitimate, desirable, and consistent with societal trends. In other words, there appears to be a moderate-to-high level of approval of current health center services among respondents.

The state legislators are an exception to the foregoing generalization. Consistently this group differed from other categories of respondents showing a stronger degree of criticism and far less approval for health care services in the area of sexuality.

Questionnaire data also revealed that legislators differed from at least some categories of respondents when it came to recommendations for changes in health care services. Specifically, legislators were more likely than some of the other groups to recommend raising student fees to cover costs of services and/or decreasing services in order to lower medical costs.

Chapter 5

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

Analyses of data collected in this study clearly show that Arizona State University at Tempe, like other universities as well as civil, military, and corporate institutions, has come to assume over the last thirty years, a far greater role and responsibility for the health care of those in its domain. In other words, there appears to be a societal trend toward greater responsiblity for health care on the part of institutions.

According to Boland (1985) this societal trend toward greater responsiblity for health care on the part of institutions in general, and universities in particular, can be expected to increase in the future, albeit at a slower pace. However, data collected in this study implies that matters could go otherwise. It is clear that legislators view the cost-effectiveness of such services poorly and that this poor opinion influences them in the direction of cutting services down. Also, if the cost-effectiveness ratings of other categories of respondents are considered, it can be seen that they also evidence low opinion as to the cost effectiveness of services. Indeed, ratings made by all groups varied no higher than 4.96 and this was the mean rating observed for

health center personnel, a group that may be seeing matters in an overly positive light.

What the foregoing may mean is that as people associated with the university and/or health care service delivery at the university, as well as state legislators, become increasingly dissatisfied with the costs of services, they may evidence an increasing desire to decrease these services. Indeed, there may be a move toward espousing that families and not institutions of education should shoulder the responsibility of seeing to a greater share of the ambulatory care of their sons and daughters. It would clearly not be the first time in America that money dictated treatment philosophy.

It seems reasonable to suggest that the university should take into account the fact that cost effectiveness concerns and worries may alter not only what the university provides in the way of health care service but also how the university sees its obligation to provide health care service. These findings must be considered by those responsible for administrating the school and the health care service delivery system.

It was noted that the purpose of this research was two-fold. These purposes were to (1) examine whether the Arizona State University at Tempe's health care delivery system was consistent with societal trends for institutions in the 1980s, and (2) serve as a process tool demonstrative of methods for assessing and evaluating relevant campus

opinion on health care services. While these purposes have been realized in this study, it is important to note that collected data serve merely as a preliminary exploration for such examinations. This can be seen in the fact that collected data are far from exhaustive when it comes to examining university health care delivery services.

An example of the restricted scope of this research may be seen in the fact that an important element of health care service delivery that was neither addressed nor examined in this study was the university's access to sophisticated medical technology. Indeed, in the area of technology, Boland (1985) reported that technologic development is highly involved in the current practice of medicine. Moreover, Boland reported that technological development would grow more important and significant in the future of health care delivery. Specifically, Boland (1986) reported that technology would be strongly involved in the following areas of health care delivery:

1. Nonclinical systems such as computerized medical records and management of patient flow such as admissions and appointment scheduling.

2. Preventive technologies as exemplified by DNA research, gene replacement, and synthetic vaccines.

3. Diagnostic technologies such as miniaturization, computerized medical history analysis, real-time

monitoring, computerized imaging, digital subtraction radiography, and nuclear magnetic resonance.

4. Therapeutic technologies such as improved radiation therapy, microsurgery, artificial organs, transplantation, and dissolution of stones through extracorporeal shock waves.

Given the foregoing it is recommended that future researchers investigating university health care service systems should attempt to make their studies even more exhaustive than this research, or else, perhaps, attempt to expand upon what was already done here by investigating other areas of the health care service delivery system such as medical technologies.

APPENDIX

Questionnaire

Questionnaire

Please use the scale provided below to indicate the degree to which you feel each of the services listed are legitimate health care center services.

|-------|-------|-------|-------|-------|
1 2 3 4 5 6

Not at all Legitimate — Totally Legitimate

_____ Laboratory Testing

_____ Pharmacological

_____ Diagnostic

_____ Psychological

_____ Sex Counseling

Please use the scale provided below to indicate the degree to which you feel each of the services listed are desirable health care center services.

|-------|-------|-------|-------|-------|
1 2 3 4 5 6

Not at all Desirable — Totally Desirable

_____ Laboratory Testing

_____ Pharmacological

_____ Diagnostic

_____ Psychological

_____ Sex Counseling

Please use the scale provided below to indicate the degree to which you feel each of the services listed are cost effective.

|-------|-------|-------|-------|-------|
1 2 3 4 5 6

Not at all cost effective — Totally Cost effective

_____ Laboratory Testing

_____ Pharmacological

_____ Diagnostic

_____ Psychological

_____ Sex Counseling

Please use the scale provided below to indicate the degree to which you feel each of the services listed are consistent with societal trends for institutions such as Arizona State University.

|-------|-------|-------|-------|-------|
1 2 3 4 5 6

Not at all Consistent — Totally Consistent

_____ Laboratory Testing

_____ Pharmacological

_____ Diagnostic

_____ Psychological

_____ Sex Counseling

What changes do you recommend for university health care services?

_____

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